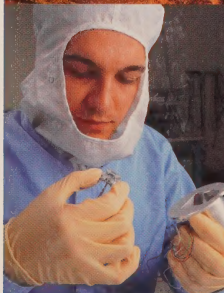
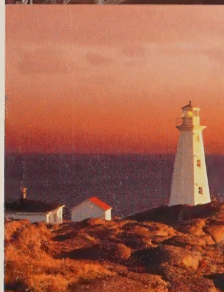
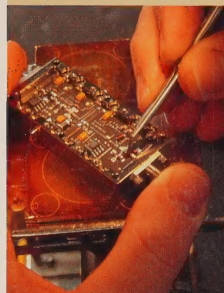


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# Atlantic Canada: *Opportunity* .....

[n. favorable circumstance for advancement or progress]

Government  
Publications

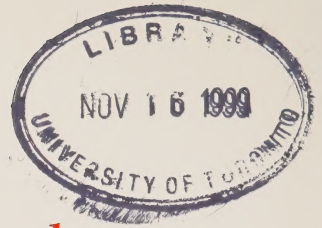


Atlantic Canada  
Opportunities  
Agency

Agence de  
promotion économique  
du Canada atlantique

Canada





# Atlantic Canada: *Well-Placed*

[adj. well-situated; convenient]



*Halterm's high-bulk year-round container terminal, Halifax, Nova Scotia*

Atlantic Canada is ideally located – strategically situated for investment, expansion and trade. That's what investors from Asia-Pacific, Europe and the Americas are finding. The North American Free Trade

Agreement (NAFTA) has enhanced Atlantic Canada's historic trading relationship with our American neighbours in the New England States. NAFTA presents opportunities for more efficient trade and the development of trading alliances between American and Atlantic Canadian industries capable of pursuing global opportunities. Atlantic Canada is closer to Europe – by more than 1,000 kilometers – than any other part of the continent.

The Atlantic Canadian infrastructure adds efficiency to proximity with advanced telecommunications, year-round ports, major air cargo routes and fast, high-bulk land transport. The industrial mix includes companies in the forefront of manufacturing, telecommunications, food processing and resource development.



## The Opportunity

On the world map Atlantic Canada is positioned to compete; it's an ideal location for business and investment.

- Located at the heart of the Atlantic Trading Rim
- 75 million consumers within a 1,000 kilometre radius
- Modern and efficient port terminal facilities
- Regularly scheduled container line services; complete global coverage
- Fastest east-west overland transport from the Eastern Seaboard to the Midwest
- Major international airports with connectors to 200 U.S. markets
- One of the most modern telecommunications infrastructure in North America





*In 1995 Atlantic Canada hosted the annual G-7 Economic Summit*

It has innovators in areas as assorted as cellular phone ground stations, software and seaweed-based products. The region's governments believe in sound budgets and supportive business policies.

On top of location, consider the business benefits: significantly lower costs than our neighbours in such key areas as property taxes, provincial business taxes, commercial real estate, labour costs (including wage and employer-sponsored benefits), a strong R&D infrastructure, expert business development teams and skilled labour.

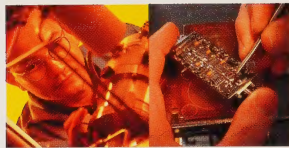
When it comes to location, you'll like the situation — in Atlantic Canada.

*"Atlantic Canada is home to a surprising number of firms aggressively expanding their international markets. Our transportation advantages definitely give them a leg-up. More than 25 container shipping services call direct, offering complete global coverage. And our on-dock double-stack train services provide fast, cost-effective connections to Central Canada, the U.S. Midwest and beyond."*

Wade Elliott, Executive Director,  
Halifax-Dartmouth Port  
Development Commission.







# Atlantic Canada: *Innovative*

[adj. new; different; creative]

Whether it's taking new spins on traditional industries or sailing out into cyberspace, Atlantic Canada is developing new methods, creating new technologies and generating new opportunities. As a result, you'll find endless trade and investment opportunities here.

This region's long-established expertise in resource management has spawned a whole geomatics industry – all the way from mapping hardware and software to remote facilities management.

Atlantic Canada's sea-bound history has given us leadership in cold ocean engineering, marine communications, navigation and aquaculture.



*Hermes Electronics assembly facility, Nova Scotia*



## The Opportunity

Atlantic Canadians are an innately innovative, inventive people who never tire of discovering new products to sell, services to offer, and better, more efficient ways of doing business.

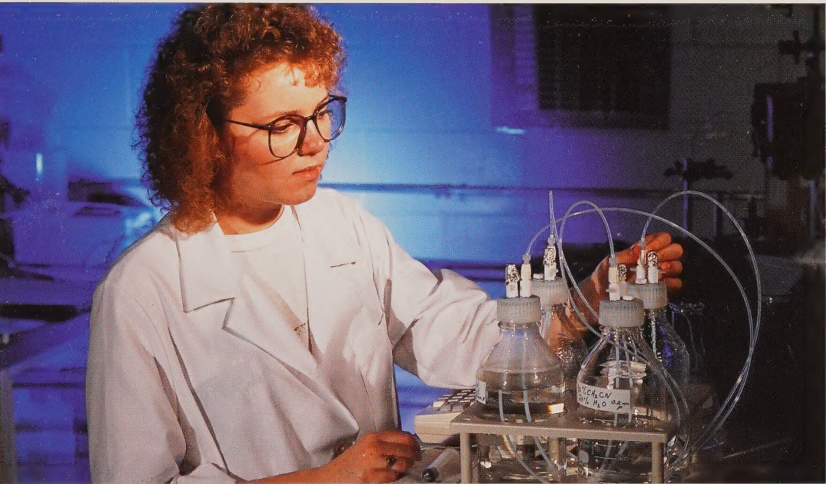
- Leaders in the emerging high-tech computer mapping (geomatics) sector
- Largest per capita concentration of universities and institutes in Canada
- One of the greatest concentration of marine scientists in the world
- Innovators in pharmaceuticals
- Home of diverse knowledge industries: software, precision manufacturing, biotechnology



Atlantic Canada, where telephone inventor Alexander Graham Bell experimented with sound transmission, remains on the cutting edge of information technology. This region is home to one of North America's premier call center locations.



Digital multi-media technology developed by Fundy Communications, New Brunswick



Research lab – Diagnostic Chemicals, Prince Edward Island



Ocean navigation bridge simulator, St. John's, Newfoundland

Atlantic Canadians are receiving international recognition for environmental management software; we are creating leading courseware, virtual campuses, on-line services, cybermalls and much more.

Feeling creative? You'll be inspired — in Atlantic Canada.

"Atlantic Canada is brimming with innovation. Software development, computer-based land and ocean mapping, cold ocean research, satellite and space technologies: all are emerging, growing stronger and more sophisticated every day. Not only do we lead the field in dozens of increasingly complex and lucrative economic sectors, we are constantly pushing back the boundaries of existing ones."

Regis Duffy, President,  
Diagnostic Chemicals,  
Charlottetown,  
Prince Edward Island



# Atlantic Canada: *Resourceful*

[adj. ingenious; skillful; having resources]



*Potato processing plant and farm with potato crop, Prince Edward Island*



## The Opportunity

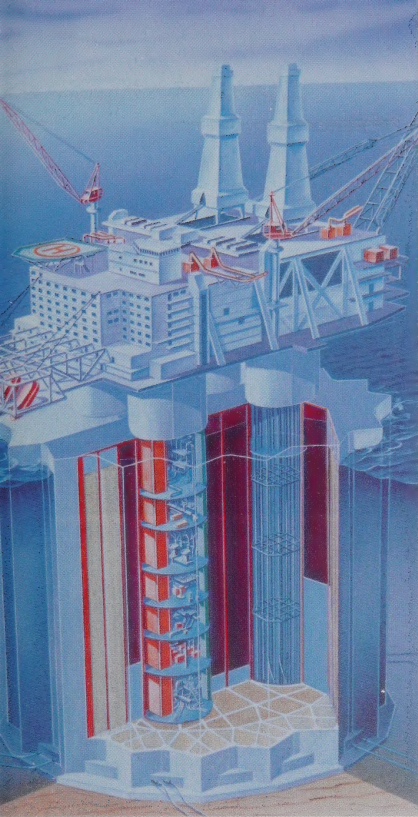
Atlantic Canada's abundant resources not only include its rich mineral deposits, woodlands and ocean bounty, but also the expertise to develop and add value to these assets – to build successful trading partnerships.

- Rich deposits of offshore oil at Hibernia and Terra Nova in Newfoundland
- Rich deposits of natural gas off Sable Island (a 530,000 mm Btu/day natural gas pipeline to fuel industrial growth)
- Rich mineral deposits, including nickel, iron ore and gold (mining in Atlantic Canada is worth more than \$2.5 billion)\*
- Among the world's most efficient drilling and mining technologies
- Close to \$2.5 billion in forest products exports
- High-tech, secondary seafood processing for New England and European markets
- The largest aquaculture industry on the Eastern Seaboard
- One of the largest seed potato industries in North America, growing more than 250 varieties

\*Note: All dollar figures are in Canadian funds unless otherwise stated.

Atlantic Canada is resource-rich. Our forests cover millions of hectares. We have just about every mineral from antimony to zinc, all manners of seafood and agriculturally based food products ranging from "lobster au gratin" to specialty chocolate. And whatever the resource, our aims are quality, sustainability and adding value. All of that means quality products and excellent investment opportunities for you.





Rendering of gravity-based Hibernia production platform, Newfoundland

In forestry, mining, fishery or food production, you'll find us highly ingenious. Look at our scientific forest management – and the Atlantic Canada-developed forest management software that is selling internationally. Look at our computerized



Products from the forests of New Brunswick

milling and mining operations. Look at the new, environmentally benign pulp process we've developed. Or the ways we've learned to stagger molt so fresh lobster is available year-round. Look at the markets we've developed for species once considered marginal – like sea urchins and sea cucumbers. Look at the range of seaweed and peat-based products we sell worldwide.

Finally, taste our aquaculture-reared salmon and mussels, our world-famous potatoes, and the delicious wild blueberries we harvest for export.



Lobsters from Clearwater's dryland lobster pound, Nova Scotia

Resourceful, that's the way we are — in Atlantic Canada.

"Today, our region is home to experts in value-added seafood production, sensible forest management, and safe and reliable mineral and oil production. Canada, and Atlantic Canada in particular, has spent considerable time and energy husbanding and managing its natural resources with the long-term view of sustainability. Our industries are benefiting from this attention. In this sense, one of our greatest resources is, in fact, our brain power."

John Risley, President  
Clearwater Fine Foods  
Halifax, Nova Scotia







# Atlantic Canada: *Enterprising*

[*adj.* energetic; resourceful; taking the initiative]

In Atlantic Canada, you'll find scores of new businesses eager for investment, joint ventures and partnership.

Many of these start-ups are small firms founded by entrepreneurs with good ideas. The range of those ideas stretches the imagination – from children's scissors that will only cut paper – not tiny fingers –

to fresh-frozen plasma controls, electronic tracking technology to sensor technology that detects ice on the wings of aircrafts.

For new entrepreneurs, established companies, and outside firms opening branches or relocating to Atlantic Canada, we



*INSTRUMAR's clean-wing detection system, Newfoundland*



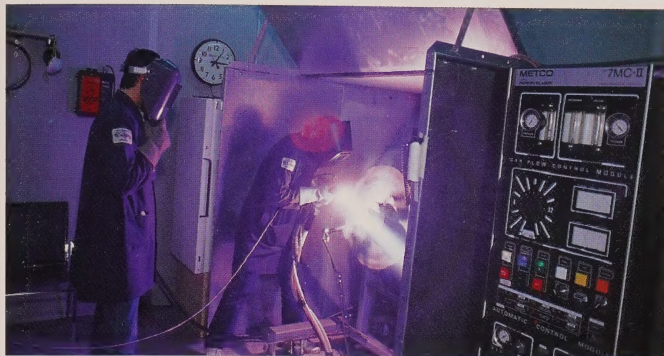
## The Opportunity

Atlantic Canada is a region of highly skilled, highly motivated people who aren't afraid to take a risk in the face of opportunity. Entrepreneurs are alive and well and at work all over the region.

- One of the best-educated workforces in Canada
- One of the lowest absentee rates among workers in Canada
- Among the lowest labour costs in Canada
- High labour productivity
- Fastest growing use of technology in Canada among manufacturers
- Stable workforce: lowest worker initiated turnover in Canada
- Availability of skilled labour

have the right kind of workforce – skilled and stable. We have one of the lowest worker-initiated turnover rates in Canada.





*Atlantic Turbines' jet engine repair facility,  
Summerside, Prince Edward Island*

Absenteeism is below national and American averages. What's more, many of our people are bilingual and that means you can get the staff you need to work in either of Canada's official languages, English and French.

Companies in Atlantic Canada find dedicated and eager employees. They also find a highly evolved training network, equipped to design and deliver custom programs to fit individual corporate needs.

When it comes to enterprise, we are taking the initiative — in Atlantic Canada.



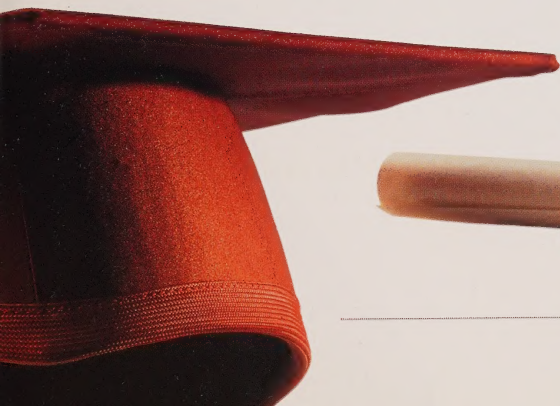
*Students working at Dal Tech*



*Yogurt from Peninsula Farms,  
Lunenburg, Nova Scotia*

*Canada's premier  
courseware developer  
sums it up,  
"Here we have a  
supply of bright  
graduates from local  
universities and  
colleges, a  
cooperative university  
research community,  
a strong high-tech  
sector, an  
entrepreneurial  
business community  
and a government  
that understands  
business needs."*

Ken Reimer, President  
LearnStream  
Incorporated,  
Fredericton,  
New Brunswick







# Atlantic Canada: *Welcoming*

[adj. friendly; warm; inviting]



*Gros Morne National Park's spectacular fjords, Newfoundland*



## The Opportunity

- With miles of sandy beaches, magnificent rivers and unspoiled countryside, Atlantic Canada offers limitless tourism opportunities. And the returns are tremendous.
- For investors looking to locate a plant or expand an operation, Atlantic Canada's natural environment offers definite advantages. Atlantic Canadians enjoy a quality of life which is the envy of the world. The natural warmth of the people and the high standard of living combine to produce a very productive and stable workforce.
- An unequalled lifestyle, and an unparalleled environment are waiting to welcome tourists and business investors in Atlantic Canada.

Atlantic Canada invites you and your employees to discover the kind of lifestyle other regions have forgotten. Here we have safe, friendly, family-oriented communities. In Atlantic Canada people take the time to say "hello," to welcome you. Here you'll find quality housing at prices substantially lower than in most North American centres. We have fine schools, and excellent universities and colleges. Our recreational facilities offer year-round sports and entertainment. There's theatre and symphony. There's even a thriving film industry. And, wherever you are in Atlantic Canada, the great outdoors is close at hand.







*Historic Fortress Louisbourg,  
Cape Breton, Nova Scotia*



*The Algonquin Golf Course,  
St. Andrews, New Brunswick*



*The warmest waters north of the Carolinas. Cavendish Beach, Prince Edward Island*

You can swim in the warmest seas north of the Carolinas, cast in some of the world's greatest salmon river systems, observe whales and eagles, hike through unspoiled woods and along rugged fjords. Every season offers its adventures, from Alpine and Nordic skiing to golf, sailing and sea kayaking.

You'll welcome the style, and we'll welcome you — in Atlantic Canada.

## Comparative Housing Prices

### Single-family

2,200 square feet home with four bedrooms and a 2-car garage  
(exchange rate of \$1.42 CAN)

City	Canadian Dollars	U.S. Dollars
<b>Atlantic Canada</b>		
St. John's, NF	141,400	100,394
Saint John, NB	151,037	107,236
Charlottetown, PEI	155,566	110,452
Halifax, NS	162,400	115,304
<b>Other Canadian Cities</b>		
Montreal, QC	300,000	211,268
Toronto, ON	364,675	258,919
Vancouver, BC	485,500	344,705
<b>USA</b>		
Atlanta, GA	270,157	190,252
Seattle, WA	352,898	248,520
Stamford, CT	509,324	358,679
Chicago (Lincoln Park), IL	672,036	473,265
Boston (Wellesley), MA	762,767	537,160

Source: Coldwell Banker, 1998; Royal LePage for Montreal

"I've experienced 'urbanitis' — the inherent maladies of big city life and business — and, believe me, I have absolutely no regrets about leaving that behind. Located where we are, we can afford to operate a highly competitive and successful company and retain our sanity. What more could we ask for?"

Robert Zildjian,  
Chairman and Founder  
Sabian Ltd.  
Meductic,  
New Brunswick





# Atlantic Canada: *Successful*

[adj. having success; winning]

Take any measure you like and Atlantic Canada comes up a winner. We attract major outside investors and we keep them happy. We generate our own successes and export them to the world.

We're talking names like Michelin at home in Atlantic Canada for more than a quarter of a century with more than 3,500 employees at three different plants in the



*Boots being made at Terra Nova Shoes Ltd., Newfoundland*

region. Michelin (Canada) Inc. manager of Corporate Communications, Norma Nixon, says, "\$314 million is being invested in Michelin's Nova Scotia facilities for expansion and modernization projects. This investment is a testament to the skills and performance of Michelin's Nova Scotia employees."



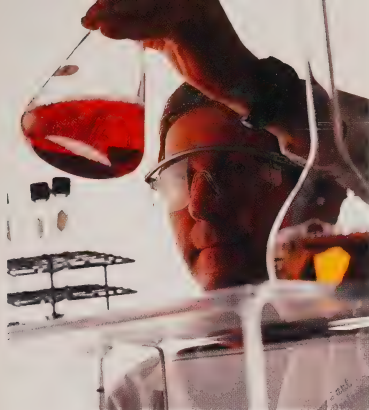
## The Opportunity

Atlantic Canadian companies succeed because they enjoy the challenge of competing on the stage of world commerce. Atlantic Canada has plenty of room to accommodate growth-oriented firms and investors.

- Home to hundreds of export-ready companies
- Regional headquarters to some of the world's great industrial concerns
- National headquarters to some of the country's largest service companies
- Financial and tax incentives to relocating businesses
- R&D tax credits to high-tech firms







Breakthrough aids research at Efamol, Nova Scotia

Companies like Performx, an innovator in computer-based training, LearnStream Inc., Canada's premier courseware developer, and Universal Systems Ltd., a world leader in geographic software systems, have all found Atlantic Canada to be the right location for expansion.

You can add a host of other companies including Purolator, Northern Telecom and Xerox.

Then there are the home-grown names like Paderno, a diversified metal engineering firm whose high quality cookware has chefs cheering. There's Pizza Delight, with 200

franchises stretching across Canada and all the way over to Dubai in the United Arab Emirates.

We have companies like Diagnostic Chemicals Limited, Canada's largest manufacturer of diagnostic products; NGM International Inc., a leader in the design and construction of OSB, MOF and particle board plants with successful projects across North America and around the world; ADI Group, whose anaerobic wastewater systems can be found everywhere from India to Indiana; and xwave solutions, the fourth largest Canadian-owned IT services company. The list goes on – Fishery Products International, McCain Foods Limited, Irving – and on.

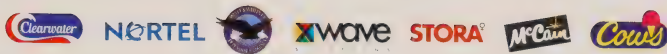


Sabian Ltd.'s cymbals are heard around the world. New Brunswick

Success. It just comes with the territory — in Atlantic Canada.

*"As a region, we're far more interested than many people imagine in forging strategic alliances and partnerships with companies around the world. We're motivated to compete not only at home but abroad – to make a name for ourselves, our communities and our businesses. Wherever we find ourselves, more often than not, we're successful."*

Dan Aleven, President,  
Terra Nova Shoes,  
Harbour Grace,  
Newfoundland



# Atlantic Canada: *Businesslike*

[adj. efficient; effective; purposeful]



Your investment in Atlantic Canada is secure because Atlantic Canada believes in fiscal responsibility.

The region's provincial governments are dedicated to making our economy as sound as possible. Among the moves different provinces

have taken are balanced budget legislation and aggressive deficit reduction. The results are impressive. Dedication to sound fiscal policies adds to our other business advantages – advanced telecommunications, highly competitive business costs, and a lively, welcoming approach to enterprise on the part of government, labour and communities. The 1999 edition of *The Competitive Alternatives*, a comprehensive business cost report produced by KPMG ranked Canada first overall among G7 countries as the most competitive investment location of choice. Of the 64 cities covered by the report, Atlantic Canadian cities were among the most cost competitive in all nine industry sectors examined.



## The Opportunity

Your business will find a home here in Atlantic Canada because we have the right environment — with government, communities and labor all eager to welcome new enterprises.

Combine that with a sound fiscal climate, advanced telecommunications, strong R&D networks, a skilled workforce and a prime business location, and you have the formula for success.

When it comes to business, we couldn't be more purposeful — in Atlantic Canada.



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# Agri-Food Industries: *Opportunity*

## Growing Food is a Growing Business

Today's agri-food industry is changing and growing to respond to consumer needs with new technologies, new products and new ways of presenting those products in the marketplace. Adapting and innovating is a way of life in Atlantic Canada where agri-food is one of the region's largest industrial sectors with annual farm cash receipts worth more than \$1 billion\* and exports in the hundreds of millions of dollars

each year to countries around the world. Atlantic Canada's strategic location with year-round transportation links to major international markets places the region in a unique position to capitalize on all it has to offer.

Here you will find the world's largest producer of frozen french fries, the wild blueberry capital of the world, and the home of the world's first chocolate bar. You'll also find Atlantic Canadian companies producing yogurt, maple sugar, molasses, crystal clear bottled water, and one of the most popular beers ever to reach U.S. consumers — specialty items for niche markets that offer opportunities to business people in Atlantic Canada. And let's not



### Agri-Food Industries

- More than \$1 billion in farm cash receipts annually
- Strong markets for potatoes and dairy products
- Increased efficiency — fewer workers but higher volumes
- Value-added (processed) products gaining market share
- Niche and specialty markets attracting more attention

\*Note: All dollar figures are in Canadian funds unless otherwise stated.

forget those delightful Atlantic Canadian delicacies making an impact on global markets – especially chanterelle mushrooms and fiddlehead greens, both harvested in the wild and sold fresh, frozen, or pickled.

A gradual but steady rise in employment and one of the best global performances with regard to inflation are key elements in Canada's stable economy, while the very favourable exchange rate with the U.S. adds tremendously to our market appeal. And, with the North American Free Trade Agreement (NAFTA), all of the 75 million consumers who live within a 1,000-kilometre radius of this region are potential customers.

Since value-added products offer opportunities to be even more competitive, there is a growing effort to further process all products on-site – turning potatoes into french fries, chicken into packets of drumsticks, and apples into applesauce and pies. Improved technology for freezing and canning have made this value-added approach more attractive, as the related fields of agriculture and

food processing continue to merge and harmonize.

## **Food Production in Atlantic Canada**

Atlantic Canada has 10,000 farms, averaging about 100 hectares each in size. Nearly 3% of the region's workforce – some 20,000 workers – is employed in the agricultural sector. While this is lower than the global average (about half of the world's workers are employed in agriculture) it is a clear indicator of the impact that more efficient practices have had on the industry in this region. Add these workers with twice as many Atlantic Canadians who work in food processing and you'll see that agri-food is an important sector for the region's workforce.

Large corporate farming operations employ their own specialists to encourage efficiency, but help is available to farms of all sizes through education facilities and government agencies. Agriculture Canada distributes information on new farming methods to farmers throughout Atlantic Canada, and maintains experimental farms and

research stations throughout the region to carry out their work and provide the latest data. Both the federal and provincial governments have agricultural specialists on staff who can provide advice.

Atlantic Canada's internationally recognized top-quality potatoes are the region's most important cash crop. Both table and seed potatoes are produced, with millions of bags of seed potatoes shipped each year to the U.S., Europe, the Pacific Rim, Africa, the Middle East, and South America.

Other major vegetable crops include carrots, cauliflower, and sweet corn. Production of frozen vegetables is a specialty for McCain Foods Limited, the world's largest producer of frozen french fries – but not so big they can't produce specialty items for niche markets. For the Japanese, who use french fries as a garnish, McCain produces fries in a uniform length.

The region produces a wide variety of other crops, for fresh produce, processing and in the case of crops like strawberries, as nursery plants which are popular in the U.S.



and Europe. Then there are wild blueberries.

Atlantic Canada is the wild blueberry capital of the world. Nearly 18 million kilograms (41 million pounds) of wild blueberries were produced in 1997 – more than 90% were exported. The growth in wild blueberry production has opened opportunities for value-added products such as pastries, yogurt, ice cream and juices. Now similar activity is underway with cranberries. More than 200 acres of cranberries have been planted in the region – growing on what was previously bog and marshland, and leading to new varieties of condiments, juices and other value-added products.

In the dairy area, cheese production enjoys steady growth, with the market for specialty cheese products forecasted to continue rising. Long-life milk products such as UHT milk and skim milk powder are major dairy exports from the region.

Atlantic Canada's livestock scene is equally lively with producers raising cattle, hogs and poultry.

## Frozen Vegetables Are a Hot Prospect

*McCain Foods Limited is an Atlantic Canadian name that is recognized worldwide. The world's largest producer of frozen french fries products, McCain is one of Atlantic Canada's largest employers. Since its beginnings in 1956, with good advertising and quality products that include a range of frozen vegetables, entrees, pizza, cheese products, juices and beverages, McCain Foods pushed its global sales to the \$5 billion mark in 1998.*

*With operations in 11 countries on four continents, McCain's 55 plants employ more than 16,000 people. Their total plant capacity enables them to process up to a million pounds of frozen potato products each hour. With their connected companies supplying manufacturing equipment and transport, they have become the producer of choice for major french fry vendors such as Wendy's, Kentucky Fried Chicken, and McDonald's.*

*McCain's chief competition in the frozen fry market is another Atlantic Canadian company, Cavendish Farms Ltd. From modest beginnings, the company leaped to the forefront of the frozen food world in 1980 after being taken over by the Atlantic Canada-based petroleum giant, the Irving Group. Now employing 800 people, Cavendish Farms serves markets in North and South America, the Caribbean, and the Far East – in fact, half of their product is marketed outside Canada. Thanks to their new \$70-million processing plant, Cavendish Farms can process a billion pounds of potatoes per year.*



## The Cow that Made Millions

*When Gordon and Sonya Jones left New York City in the early 1970s for a quieter life in rural Atlantic Canada, they thought they'd left the world of big business behind. Compared with the stresses of his former management consulting job, Gordon's biggest problem now was wondering what to do with the extra milk that their cow Daisy was producing. In an inspired moment, the couple decided to make a little yogurt.*

*The rest, as they say, is history.*

*Their yogurt quickly became popular with friends, and then around the local community. Now their company, Peninsula Farms Ltd., has annual sales exceeding \$3 million, with 43 people employed in their office and plant, or working as drivers and merchandisers. Daisy is not around anymore, but her spirit lives on in a company that currently uses 2% of the total milk production of her home province to create its many varieties of yogurt and frozen yogurt products. And Daisy survives in other ways too – her image appears on a yogurt container shipped from Peninsula Farms' plant in Lunenburg and a statue, on which kids can play, sits out front.*

Processors create a variety of value-added products including a veritable delicatessen's array of processed meats.

## Harvesting Opportunities in the Future

The agri-food industry in Atlantic Canada employs tens of thousands of workers and generates hundreds of millions of dollars in revenue annually. And it does so in both a sustainable and a forward-looking way. As new niche markets are identified, more and more companies – new ones, and the existing industry leaders – are anticipating consumer needs. As a result, every day, more and more

people around the world are sitting down to satisfy their appetites with food products from Atlantic Canada.

For further information, contact:

Trade Unit

Atlantic Canada Opportunities Agency (ACOA)

Telephone: 506.851.2271

Facsimile: 506.851.7403

WWW Site: <http://www.acoa.ca>



Atlantic Canada  
Opportunities  
Agency

Agence de  
promotion économique  
du Canada atlantique

Canada



# Biotechnology Industries: Opportunities

## Infrastructure for Innovation

In Atlantic Canada, biotechnology means big business. In fact, it means bigger business. Biotechnological innovation has spurred growth and revitalization in such key industries as aquaculture, forestry, fisheries, agriculture, health care, and environmental management.



### Biotechnology

Atlantic Canadian innovators benefit from a network of respected public research facilities, and a number of world-class universities and organizations. Among them are:

- The Institute of Marine Biosciences
- Agriculture Canada's National Potato Gene Repository
- The Research and Productivity Council
- The Institute of Biomedical Engineering
- The Canadian Centre for Fisheries Innovation
- The Marine Gene Probe Laboratory
- National Centre for Enteroviruses
- Canadian Aquaculture Institute
- Huntsman Marine Science Centre
- AgriTECH Park
- InNOVA Acorp
- BioAtlantech

By providing solutions and alternatives that help businesses grow, biotechnology has become invaluable to major industries worldwide. Here in Atlantic Canada it is a rapidly growing and vibrant sector.

## Early off the Mark

Our established community of scientists and researchers supports private sector innovation. That's what they have been doing for decades as Atlantic Canada's traditionally resource-based economy has grown and diversified. Our region boasts many organizations whose aim is technology transfer – translating developments in the academic and R&D communities to the world of practical, commercial application.

Today, Atlantic Canada is well-positioned to meet the challenges of a burgeoning global biotechnology industry.

In Atlantic Canada, we don't just help biotechnology companies prosper, we grow them! In New Brunswick, BioAtlantech is the industry's one-stop-shop for information, expertise, partnerships, and networking. It helps get new technologies off the ground and encourages existing businesses to take advantage of New Brunswick's many economic strengths – world class expertise, integrated top-notch research institutions, a low-cost business environment, extensive government assistance programs and more.

In Nova Scotia, two business incubation centres – AgriTECH Park in Truro and InNOVACorp in Halifax – are helping create new biotechnology companies. AgriTECH features a 120-acre campus close to the Nova Scotia Agricultural College, one of the leading centres for agricultural research and development in the region. It provides research assistance as well as marketing counseling and administrative

support services to new agri-food companies. InNOVAcorp operates the Technology Innovation Centre in Halifax and has plans to open more centres in the near future. It provides the right kind of growing environment for budding new technology companies.

## Health Care

Hospitals and medical organizations worldwide continually strive to improve the quality and efficiency of their care. Atlantic Canadian companies have responded to this need by creating innovative and internationally distributed products.

Efamol Research Inc. is an Atlantic Canada-based company whose research and development efforts have been used in treating cancer and diabetes and in the fight against AIDS. Efamol began in 1981 as a three-person operation producing dietary supplements. Today, it employs 30 people and specializes in pharmaceutical research. The products it helps develop to treat eczema, dermatitis and mastalgia have been sold from Ireland to Italy and Australia to South Africa. Terra Nova Biotechnology Co. Ltd. is

another Atlantic biomedical success story. Its expertise in monoclonal antibody development has earned it an international reputation, and an international market. Terra Nova's primary products have applications in bone marrow transplantation matching and in the diagnosis and prognosis of rheumatoid arthritis patients, and are distributed all over Europe and in the United States.

## Agriculture

Atlantic Canada has a long history of agricultural innovation. The region is one of North America's largest seed potato exporters. Today, more than 250 varieties are grown on Atlantic farms. The National Potato Gene Repository, located in Fredericton, holds an extensive bank of commercial potato varieties and seedlings. Atlantic potato farmers and scientists count among their many accomplishments the development of the world's best french fried potato, the Shepody, and new advances in Bacterial Ring Rot detection and control. Other innovations include new ways of making micro tubers easier to use than plantlets and a method to propagate potato plants in vitro.



On the livestock front, Atlantic Canadians are equally innovative. Often, animals on poultry and pork farms don't drink clean water. The animals themselves cross-contaminate their drinking supply with their waste products, a process called "reverse contamination". Agri-Solutions Systems Inc., a research and development company in Halifax, has introduced a new water filtration system using diffused iodine technology. Its system, IoGold™, is an easy-to-use, sealed chemical system that significantly reduces or even eliminates water contamination. "The birds are healthier, less stressed, their feed conversions go up and the mortality rate is reduced substantially. Breeder birds have a significant increase in egg production as well as hatchability," says president Wayne Harvey. It may also reduce the need for antibiotics. Fully-tested, IoGold™ is now in operation on more than 35 poultry farms across Canada with more on the way. With 17 billion chickens in the world, Agri-Solutions has its sights on exporting its technology and expanding its markets to include pork operations.

## Environmental Management

Closely tied to natural resource-based industries is environmental management, a rapidly growing sector in Atlantic Canada. Innovative firms such as Geobac Technology Group Inc. and Philip Analytical Services Inc. are developing and implementing biotechnological solutions to environmental and waste management challenges. Geobac boasts the first bio culture production facility in Canada to utilize new processes in the production of microorganisms necessary for cleaning water, wastewater and soil. Philip Analytical Services' research into marine toxins has led to identification and isolation of damaging shellfish toxins being produced in algae.

Innovations come in all sizes – some as small as the spruce bud moth. The feeding moth larvae can devastate valuable white spruce plantations and is resistant to conventional pesticides. So, scientists at New Brunswick's Research and Productivity Council (RPC) came up with a different solution, identifying the natural compounds emitted by the adult moths that control mating.

## *The Little Salmon that Grew into a Worldwide Phenomenon*

*It's not often that a single innovation can boost an industry's production rate by up to six times, but this is what AquAdvantage™ salmon promises to do for aquaculture. AquAdvantage™ salmon offer growth rates four to six times faster than those of standard salmon. The rapid growth to market size of AquAdvantage™ fish is achieved through the use of cutting edge transgenic technology that was developed by scientists at A/F Protein Canada Inc., in cooperation with academic, government, and research organizations such as Memorial University of Newfoundland, the Department of Fisheries and Oceans, and the Huntsman Marine Science Centre. Company research and broodstock development are carried out in Newfoundland and at the company's modern fish hatchery, AquaBounty Farms, on P.E.I.*

*The company already has licensing agreements with aquaculture ventures in New Zealand, Scotland, Columbia, and the United States. And now the methods used to develop the rapidly growing AquAdvantage™ broodstock are being applied to other aquaculture species, such as trout, Arctic char, tilapia, and flounder. Strains with increased disease resistance and cold tolerance are also in the pipeline.*

*A/F Protein's innovative spirit doesn't stop with transgenics. It is also the world's first commercial producer of antifreeze proteins. These proteins are generated naturally by cold ocean fish to protect them from freezing in winter, and have been found to be beneficial in the cold storage of mammalian tissues and organs. Further applications are being explored in the medical, cosmetics and frozen food industries. A/F Protein is the "perfect model" of smooth and effective technology transfer, says Dave King of Seabright Inc. "They're entrepreneurs...working in a core technology with multiple applications."*

*"I think this is an ideal situation...  
Atlantic Canada is an excellent place  
to source technical personnel."*

*- Regis Duffy, President  
Diagnostic Chemicals Ltd.,  
Charlottetown, Prince Edward Island  
Annual sales of Diagnostic's  
biochemical products were \$18  
million\* in 1998.*

They have synthesized these pheromones and impregnated them into "twist-tie" sized ropes that can be attached to trees. The "twist-ties" slowly release the bio active compounds, confusing the male moths and making them unable to locate the females. It's frustrating for the moths, but very good for forestry.

## **Fisheries and Aquaculture**

Biotechnology has breathed new life into the Atlantic fisheries and aquaculture industry through techniques and processes that improve both product and productivity. New hatchery technologies, genetic tracing methods, and disease research help breeders maximize their harvest, while

techniques such as seaweed colourization and chitin extraction are expanding the market base and value of traditional products.

The National Research Council's Institute for Marine Biosciences (IMB) provides both fledgling and established companies with a research ally in the marine and aquaculture fields. Whether as an information source or as a research partner, the IMB gives companies the benefit of its facilities, as well as its expertise.

Seabright Inc., the technology transfer arm of Memorial University of Newfoundland (MUN), has signed licensing agreements and acquired patents for technologies developed at MUN since 1987. One of three Seabright spin-off companies, Bio-ID Corp. Ltd., produces FINS (Forensically Informative Nucleotide Sequencing), a method of tracing the biological origin of a tissue sample or specimen. By making use of FINS technology, breeders in aquaculture and agriculture can obtain genetic

markers for the breeds and strains they develop, and conservation agencies will be able to monitor more accurately, endangered species. FINS can also be used by police officers, health inspectors, wildlife officers, and diagnostics labs. Bio-ID's multifaceted product has earned them an international market.

## **The Leading Edge**

With Atlantic Canada's background in natural resource management and utilization, it is no surprise that we have recognized the enormous potential of biotechnology in major industries. The global economy is realizing the importance of biotechnological solutions to core industries such as aquaculture, forestry and health care, and Atlantic Canadians are on the forefront of this trend.

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# Business and Professional Services: *Opportunity*

## Business and Professional Services In Atlantic Canada

Atlantic Canada boasts more than 7,200 firms in the business and professional services sector. Services range from marketing, engineering, and management, to financial, scientific, technical and legal. And, like other Atlantic Canadian businesses, business and professional service firms are forward-looking, ensuring that they can answer current and emerging needs.

## Focused on the Future

A good example of that forward-looking focus in action is Newfoundland's ZeddComm Inc. Started in 1992, this award-winning St. John's-based IT company has offices in Saint John, New Brunswick and Los Angeles with consulting teams in Ottawa, Chicago and San Francisco. ZeddComm offers a diverse range of IT, business and marketing consulting and backs it up with its own leading edge in-house software development service. Its IT solutions can be found from John Hopkins University Hospital to the Malaysian Department of Health to American Mobile Satellite Corporation and everywhere in-between. Another Newfoundland company that has developed an international business support niche is Core Technical Solutions Inc. The St. John's-based firm builds industrial strength Web and non-Web e-mail systems. By



### Business Services

Atlantic Canada's Business Services Picture

7,200+ business and professional services firms, including:

- 800 engineering firms
- 1,000 management consulting firms
- 600 scientific and technical services providers
- Hundreds offering marketing, training, financial and legal services.

providing data integration services, the firm has an expanding client list, including such Fortune 500 companies as Toyota North America, Overland Data and Toshiba, as well as the US Navy and the US Department of Defense.

Each Atlantic province offers similar examples of a forward-looking focus. And each, as well, benefits from effective provincial organizations that are helping to keep IT firms ahead of the pack. For instance, Nova Scotia's NovaKnowledge, a non-profit association, is committed to keeping the province on the leading edge of the knowledge economy. NovaKnowledge promotes IT education, training and business development. Through stakeholder assemblies, annual knowledge economy report cards, business education programs and awards, it keeps the province's IT industry, decision-makers and the public on its toes. Nova Scotia's knowledge industry is already at the top of its game. NovaKnowledge is helping it stay there.

## Training Leaders

When it comes to preparing for the future, nothing is more important to business than training. And Atlantic Canada's training industry ranks among the best. While in-person training will likely always have a place, newer modes like interactive video, customized computer-based and online instruction are the growing wave. Indeed the region is home to the world's largest on-line training community for IT, New Brunswick-based Scholars.com. This firm, a Microsoft Certified Technical Education Centre, was the first online trainer to provide 24-hour a day mentoring. And like New Brunswick, the other Atlantic provinces can boast training leaders. A good example from Nova Scotia is Halifax-based Knowledge Navigators International Inc. A specialist in online learning, Knowledge Navigators' Learning Engine™ has attracted an international clientele.

Together there are more than 1,400 training companies and institutions in the four Atlantic provinces. The kind of training they

offer runs the gamut from communication and interpersonal skills, to management and human resource development and planning, to quality assurance and online multimedia design, to specialized industry training in fields as varied as call centre operation and hotel management. Fully 68 per cent of the region's trainers address computer-related needs.

The training offered is excellent; the way it's marketed is pace-setting. For instance, the New Brunswick Training Group Inc. (NBGTI) is a model for provinces across Canada. It's the umbrella for the New Brunswick training industry — which includes, among others, its courseware developers, second language specialists, human resource practitioners, engineering consultants, communications companies, colleges, universities and special agencies. Working together under the NBGTI umbrella, the companies market their services around the globe. Sometimes that togetherness continues under contract, with training companies forming consortia to answer specific training needs.





## Translation Wizards

Atlantic Canadian translation firms also have a world-wide appeal — appeal that's growing every day as companies strive to break into new markets and meet the demands of the North American Free Trade Agreement (NAFTA) and the European Union — to say nothing of Canada's own bilingual requirements. Atlantic Canadian translators are leading the field. New Brunswick's Optimum Translation, was the first translation firm in the world to achieve the ISO 9001 quality standard. Another New Brunswick company, Lexi-tech International, has pioneered computerized translation. Lexi-tech employs 200 translators and works in 30 separate languages, processing some 70,000,000 words or 175,000 pages each year. It operates on a wide area network that includes all major hardware platforms, including UNIX, PC and Macintosh.

## Engineering Experts

The business and professional services' picture in Atlantic Canada also includes 800 engineering firms,

many with major international contracts and a wealth of expertise. Atlantic Canadian engineers are building anaerobic wastewater treatment systems around the globe. They are heading the breakthrough plasma reactor pilot plant project in Singapore to destroy hazardous waste. They are developing new electromagnetic methods to extract minerals.

## Management/Business Consultants

Another big component of the region's service sector is management consulting, with over 1,000 companies primed to work with business. The region also has scores of qualified marketing firms, able to develop promotional tools in all media — print, broadcast and digital. Then there are the 600 scientific and technical service providers. Their services are as specialized as the demand. A good example is Prince Edward Island's Food Technology Centre and its new food safety and quality management systems for food processing and food service companies. Similar centres operate

### *The Island that IT Built*

*It isn't hard to find leading-edge Information Technology companies anywhere in Atlantic Canada. In fact, in Nova Scotia, there's a whole island of them. Silicon Island is the IT innovation centre that's transforming Cape Breton from its industrial past in coal and steel into its digital future. At Silicon Island, you can find the highest level of multimedia, computer animation and distance education services.*

*Silicon Island is not only a place for local companies to call home, it's a place for them to grow. The major training, design, and multimedia companies at the centre exchange operating information and share resources. That keeps them on the leading edge of technology. And by working together they can handle the bigger projects smaller companies can't.*

*Tenants include the Centre for Distance Education, McKenzie College and MediaSpark, voted by the Financial Post as one of the top 25 up-and-coming businesses in Canada. Silicon Island also benefits from an alliance with the Technology Enterprise Centre at the University College of Cape Breton.*

*Silicon Island — an island the knowledge industry can call home and another Atlantic Canada business service success story.*

across the region, answering the demands of industries as different as forestry, peat, construction and aquaculture.



## The Nuts and Bolts of Business

While Atlantic Canada is at the forefront of innovative means of business support, it remains strong in traditional services — the nuts and bolts of business, such as accounting, financial and legal services. The region's 1,074 accounting offices are a blend of national firms like Deloitte & Touche, KPMG, Ernst & Young, PricewaterhouseCoopers, and Coopers & Lybrand as well as numerous medium- and small-sized operations. Financial services cover the field, and include such noted e-commerce specialists as Prince Edward Island's Marshall Media. In legal services, the region's 4,000 lawyers are found in small-, medium- and large-Atlantic-wide practices. Many work in English

and French and offer specialized expertise in such areas as maritime law, constitutional law, intellectual property law, and telecommunications law. And, of course, in a region that is home to the Sable Gas, Hibernia and Terra Nova energy mega-projects, the legal aspects of oil and gas are a specialty, with some regional firms rivaling those from Alberta's energy patch for breadth and depth of expertise in energy resources.

Business and professional services comprises a vast sector in Atlantic Canada — one bursting with expertise and invention. So, the bottom line for investors, industry and entrepreneurs in the region is that here you'll find all the help you need.

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# Construction: *Opportunity*

## Smart builders

Atlantic Canadians are builders. Our skilled workers and competitive companies have a reputation for excellence, at home and abroad. No wonder. Just look at some of our current and recently completed infrastructure projects: the 12.9 kilometre sweep of the Confederation Bridge, the massive Hibernia oil platform, major new links in the Trans Canada Highway, and Atlantic Canada's first natural gas pipeline. And with all of these, we're not just talking about building on time and on budget. We're talking about building smarter, with new technologies and new techniques.

In 1999, more than 150 major construction projects worth more than \$40 billion were underway throughout the region. According to the Atlantic Provinces Economic Council, the region is entering a

period of substantial [construction] business investment growth. Overall non-residential construction investment is expected to grow 7.4 percent per year from 1998 to 2001.

## Projects large or small – Atlantic Canada does it all

Atlantic Canada is the site of some of the most complex construction projects in the world, from the Hibernia oil platform in icy waters of the Atlantic Ocean off Newfoundland to the natural gas pipeline running from Nova Scotia to Massachusetts.

In Newfoundland and Labrador, offshore energy projects have transformed the provincial construction industry. The \$8-billion Hibernia offshore oil project involved the construction of a custom-made drilling platform for use in 80 metres of water some 315 kilometres southeast of St. John's. The platform



## Construction

Atlantic Canada's construction industry is skilled, smart and competitive

### Workers:

- More than 50,000 skilled construction workers
- Significantly lower construction wages than Canadian average
- Lower unionization rates than Canadian average
- Excellent training centres, schools, universities

### Companies:

- 10,000 plus companies
- \$1 billion plus in payroll
- More than 90% Canadian owned

### Professionals:

- More than 10,000 engineers in Atlantic Canada
- Some of the best engineering schools in the country
- Three construction research chairs at Atlantic Canadian universities
- Construction Engineering and Management – University of New Brunswick
- Highway Construction and Pavement research – University of New Brunswick
- Construction and Industrial Safety – Memorial University of Newfoundland

used a unique special Gravity Based Structure design. While complicated to build, it's strong enough to survive a direct impact with an iceberg. The superstructure was manufactured at a special \$500 million construction yard the Hibernia consortium built at Bull Arm on Newfoundland's Trinity Bay. The platform pumped its first oil in November of 1997.

Newfoundland's expertise in offshore construction is continuing with the \$4.5-billion Terra Nova oil project on the Grand Banks off Newfoundland. Two of the four major modules required for Terra Nova's floating production storage and offloading vessel are being constructed at Bull Arm.

Nova Scotia, too, is benefiting from offshore energy development. The \$2.5-billion Sable Island natural gas project involves six fields some 160 to 300 kilometres off the east coast of the province. Two offshore platforms and a central production and processing platform will be constructed. A 26-inch subsea pipeline will pump natural gas 200 kilometres to shore. On land, the project will include a processing plant at Goldboro, where the pipeline comes ashore, and a fractionation plant at Point Tupper.

New techniques are being applied in the new \$1.7-billion, 1,051 kilometre natural gas pipeline being built by Maritimes & Northeast Pipeline between Goldboro and Dracut, Massachusetts. The pipeline will pump up to 530,000 MMBtu of

natural gas a day when it begins operation in November, 1999. In its passage through New Brunswick, the pipeline will cross the Saint John River — a waterway large enough to be known as the Rhine of North America. But the pipeline workers won't get their feet wet. Contractors are using horizontal drilling to drill a pilot hole under the river from one side to the other. When the hole is large enough, the drill then pulls a section of pre-assembled pipe on one side of the river through the opening to the other side. It's clean, efficient and environmentally friendly — one of many innovative construction techniques being used in the project.

Atlantic Canadian construction companies are also good at building things over water — like the \$1-billion Confederation Bridge across the Northumberland Strait between Prince Edward Island and New Brunswick. The 12.9 kilometre bridge, which opened in May 1997, is the longest bridge over ice covered water in the world and an engineering marvel. The bridge was called "revolutionary" by the Canadian Construction Association (CCA). The techniques used by the

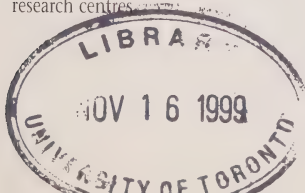




bridge's builder, Strait Crossing Joint Venture, won the CCA's 1996 Montgomery Memorial Award for innovative construction. It was meticulously built using post-tensioned concrete, bringing together the 44 precast piers and 175 main components to create one continuous unit with high-tensile-strength steel cables. The massive components, some weighing as much as 7,500 tonnes, were constructed at a specially built world-class staging facility in Borden-Carleton, Prince Edward Island and then transported to the bridge site via a jetty constructed for the project. More than 10 million metres of post-tensioning steel holds the Confederation Bridge together, equal to more than four times the length of the Great Lakes.

### Smarter builders

In Atlantic Canada, we don't just build things — we build them better. In part, it's due to our commitment to research and development through our world famous engineering schools and research centres.



The Construction Technology Centre Atlantic (CTCA) in Fredericton is a non-profit corporation dedicated to being a central technology transfer point for the region's construction industry. Associated with the University of New Brunswick's School of Engineering, the CTCA is a pioneer in integrated construction management system design and distance education delivery programs for the construction industry. The CTCA took a lead role in the development of COOLNet, the Internet-based construction information system used by 18 different Canadian construction associations. COOLNet delivers information, electronic plans and specifications. The Centre also developed SICON, a secure Internet-based software system that lets users share and distribute construction project information and documentation, and the Secure Document Handling System (SDHS), its predecessor. SDHS is now being evaluated for implementation by several construction associations. CTCA and the University of New Brunswick's Construction Engineering Management Group are

### Construction expertise on tap

*When Coors Brewing Company needed a new wastewater facility at its Elkton, Virginia plant, they turned to ADI Group Inc. The Fredericton, New Brunswick-based engineering firm designed a six million gallon in-ground, double geomembrane-lined anaerobic wastewater treatment system using their own proven ADI-BVF design. To Coors, ADI was the perfect choice. It had both the environmental expertise and the construction know-how to get the job done.*

*That's ADI. The multi-disciplinary engineering company has taken its wastewater treatment expertise around the world, from a fish processing company in Norfolk, Virginia to distilleries in India. Its 250 engineers, architects, consultants and technical support personnel have worked in North America, South America, the Caribbean, Europe and Asia.*

*Started in 1945, the company offers a range of construction and related services including design-build and project management, architecture, environmental science, geomatics and business planning. It's a winning combination. ADI not only designs cost-effective anaerobic treatment systems, it builds them. It's a highly successful international construction company that calls Atlantic Canada home.*

also working on the development of a new video system to monitor and improve productivity levels in the construction industry.

Our research into better construction methods and techniques is all it's cracked up to be. Researchers

## Building Paradise

*You can find Paradise right in Atlantic Canada. Paradise, Newfoundland, that is — the new, leading-edge retirement development in a community just outside St. John's. It may not be Shangri-La, but it is an award-winning example of what Atlantic Canada's innovative home-builders can do.*

*The 73-acre integrated Paradise development being built by Karwood Estates will feature more than 400 houses, a community centre and a special care home.*

*Each has been specially designed with healthcare as the number one focus. Every home is an R-2000 home and both the community centre and the special care home are rated C-2000 (R-2000's commercial counterpart). Besides being energy efficient, the structures will give residents the type of environment they want — filtered air, even heat and no drafts. Every home has also been designed to be fully accessible. Windows are lower to the floor, counter heights are adjustable, the floor plan features an open design and bathrooms are pre-wired and ready for bathtub hoists and other equipment for the disabled. The entire community is wheelchair accessible, including the four kilometres of walking trails. Innovative design and quality construction — a good example of Atlantic Canadian builders at work.*

are making concrete that is less likely to crack thanks to the development of new synthetic fibers. A team from DalTech in Halifax, Nova Scotia home to Dalhousie University's School of Engineering, and Atlantic Fiber Technologies of Sydney, Nova Scotia discovered a new type of synthetic fiber that has the potential to replace a portion of the primary steel reinforcement currently used in reinforced concrete, particularly in

shotcrete applications. The manufacturer and distributor of the new technology are spending \$1.5 million to fund a research program into the synthetic fiber at DalTech.

### The best quality at competitive prices

You don't have to come to Atlantic Canada to see the quality of our work. Our engineering and construction firms are busy building ... around the globe. And you may even

be living with one of our smaller construction products. New Brunswick-made windows, doors and prefabricated homes in the US, Asia and Europe. Canada's housing export industry is enjoying phenomenal growth. Exports of prefabricated buildings topped \$20 million in 1998.

### Whatever you want to build, you'll find our prices very competitive.

A recent study by KMPG of 64 cities in North America, Europe and Japan found that Canada had the lowest construction costs. Based on a number different factors, including construction, taxes, labour, power and more, some of Atlantic Canada's cities were among the best location to establish a plant.

Atlantic Canada — building it right.

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# Environmental Industries: *Opportunity*

## Environmental Awareness Blends with Business Savvy

Atlantic Canadians, with their industrial tradition built on forestry, fishing and mining, have been quick to recognize opportunities in the environmental industry.

One company has successfully launched a breakthrough mobile environmental cleanup unit in the worldwide market. Another unique partnership between government and industry has produced the country's first fully integrated waste

management facility. Other companies are marketing everything from a biodegradable peat moss-based oil absorbent to software that simulates environmental management scenarios.

New companies are stepping forward daily to meet the needs of both government and business, providing technology and services that are marketable both in Atlantic Canada and throughout the world.

Changing standards and industrial regulations are a reflection of public attitudes and awareness about protecting and improving the environment. What has emerged from those evolving standards is a global environmental industry sector worth an estimated US\$600 billion.



### Environmental Industries

- Global markets – US\$600 billion
- Global market growth – 5%
- Canadian market – \$16 billion\*
- Number of Canadian environmental companies exporting to US expected to double by Year 2000
- Atlantic Canada
  - 500 companies
  - 7,500 workers
  - \$526 million in sales (1995)

\*Note: All dollar figures are in Canadian funds unless otherwise stated.



## Environmental Industries

### Opportunities:

- Technology, products and services for industry
- Cleaner industrial processes that benefit the environment
- Environmentally friendly consumer products and services

### Growth areas include:

- Environmental audits
- Air-, soil- and water-quality testing
- Site assessment and risk assessment
- Site remediation
- Resource recycling
- Solid waste management
- Hazardous waste management
- Laboratory services
- Environmental health and safety education and training

Here in Canada, the market for environmental equipment and services is estimated to be \$16 billion and is climbing steadily. With exports in the range of \$660 million a year, it is no wonder that Canada is the seventh largest player in the global environmental industry marketplace.

Atlantic Canada, with its unique ecosystem and pioneering environmental standards, has developed a diverse and dynamic industry. The region has more than 500 environmental companies and employs more than 7,500 workers. The environmental industry in Atlantic Canada has annual sales of more than half-a-billion dollars.

Atlantic Canada has long had a solid base in environmental science and technology through its nationally recognized private and public research and development facilities and university and college education programs. Productivity levels here are high, relative to other industries. Research has shown that worker output in this sector is nearly 25% higher than that of other manufacturing sector workers, and

nearly double the record for the entire economy.

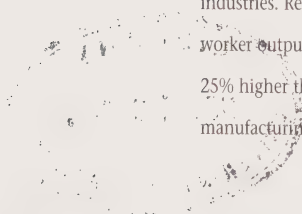
While there are many aspects of the worldwide environmental industry, more than 40% of global spending in this sector comes from municipalities striving to improve the local environment, while more than 20% is associated with products and

### *An Environmentally Friendly Manufacturer: the Cat's Meow*

*What your cat does in the privacy of his litter box has hit the papers! No, kitty hasn't made the tabloids. He's helping reduce waste and save the environment, thanks to Canbrands International. The Moncton-based company makes an ingenious brand of kitty litter out of recycled newspapers. It's called, what else, "Yesterday's News." and has turned Canbrands into a front-page success story.*

*The company has seen its revenues grow from \$895,000 in 1992 to \$5.7 million in 1997. It produces more than 7,000 tonnes of kitty litter each year. Most of it is exported – to the U.S., France, Norway and Japan.*

*Canbrands is now an award-winning exporter and a leader in manufacturing environmentally friendly products.*



services aimed at the forestry/pulp and paper industry, principally in wastewater treatment and air quality control.

Atlantic Canada's industrial sector is uniquely situated to develop strategies and technologies that are marketable in other marine environments worldwide. As the environmental industry grows, Canadian companies gain expertise in striking a balance between the need for resource efficiency and the client's need to maintain a competitive position in a specific marketplace. By protecting the region's leading export of wood products, marine products and mineral resources, this sector has actually established a new leading export – Atlantic Canadian environmental expertise.

*Oil spills, leaking tanks of fuel and hazardous wastes, the contamination of land and water around aging industrial sites – all of these are topics that grab headlines in today's environmentally aware world. Turning that concern into opportunity, some businesses are stepping in to offer solutions.*

*Jacques Whitford Environment Limited has been in operation since 1972.*

*They now have offices throughout North America, and major projects underway in China, Russia, and Mexico. When called in to consult on the problems associated with petroleum spills, the engineers at Jacques Whitford chose to do more than simply report on the extent of the problem – they decided to provide a workable solution. The result is their Mobile Environmental Remediation System (MERS), a highly mobile first response solution to leaks and spills.*

*The MERS unit is a self-contained device that has been used successfully in homes, offices, schools and refineries throughout North America. It performs vapour extraction, air sparging and induction, sand filtration, water treatment, and product recovery, and features its own automatic safety systems. The success of MERS means new business for Jacques Whitford – MERS units are now working full time as far away as Argentina.*

*Hi-Point Industries (1991) Limited is another successful Atlantic Canadian company tackling the problem of hydrocarbon spills. The company produces environmentally safe, all natural oil absorbents. Its patented Oclansorb® is an organic, nontoxic, lightweight absorbent. Oclansorb® has proven effective in large spills worldwide, including Alaska's Exxon Valdez spill and a major Amazon jungle spill. Today, Hi-Point's Oclansorb® and related products are used internationally at manufacturing plants, pulp and paper companies, oil storage facilities, oil refineries, petrochemical and chemical plants, transportation depots, airports and a host of other facilities.*





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# Fishery/Aquaculture Industries: *Opportunity*

## Creative Product Development Fueling Atlantic Fishery Growth

Canada boasts the world's longest coastline and a reputation as one of the world's leading exporters of seafood products. And Atlantic Canada, with its four seaboard provinces, accounts for the major portion of the rich variety of harvested and processed groundfish,

shellfish, and pelagic products exported worldwide. In 1996, Atlantic and Pacific Canadian landings totaled more than 925,000 tonnes with Atlantic landings accounting for almost 68 per cent of that. The Atlantic coast fishery, rich with diverse resources, has a long and distinguished history – one predating Canada's birth.

The Atlantic region is recognized internationally for its industry leadership and innovation. Here you'll find the world's leading producer of canned sardines using juvenile herring, a packing and shipping system allowing live lobsters to be delivered anywhere in the world, applications of advanced technologies in such diverse areas as control of lobster molting cycles and



### Fishery / Aquaculture

#### Commercial Fishery

- Almost 600,000 tonnes in commercial landings in 1997
- Total value almost \$1 billion\*
- Total landings in Newfoundland in 1998 highest on record despite downturns in cod fishery

#### Aquaculture

- Total aquaculture production more than 31,000 tonnes a year
- Sales more than \$150 million a year and growing
- More than 200 farms
- More than 3,300 direct jobs

\*Note: All dollar figures are in Canadian funds unless otherwise stated.



## Eliminating Barriers

*While the United States accounts for the majority of exports from Atlantic Canada, location and quality product diversification have helped the region capture significant markets in both Europe and the Pacific Rim. Trade agreements – the Canada/U.S. Free Trade Agreement, the North American Free Trade Agreement and the Uruguay Round of GATT – are opening doors to additional market opportunities every day.*


### Canada/U.S. Free Trade Agreement

- Elimination of tariffs on processed seafood and marine products, increasing export potential and giving a competitive edge over Norway, Sweden and Iceland competitors
- Harmonization of technical regulations so as not to restrict trade in fishery products

### North American Free Trade Agreement (NAFTA)

- As of January 1994, phase out of tariffs on almost all Canadian exports to Mexico over 10 years with more to come over 15 years
- Streamlined customs procedures and liberalized investment policies

### GATT – Uruguay Round

- Approximately one-third tariff reduction on processed fish products
  - Tariffs on a wide range of fish processing inputs and equipment have been reduced or eliminated
  - Enhanced export competitiveness throughout the Atlantic region, particularly for processed fish products exported to Europe, Japan, and the Republic of Korea.
- Key areas of interest are crab, lobster, herring, livers, roe, frozen fish, shrimp, frozen filets, halibut, salted fish, scallops, and mackerel.*
- 

development of a deck-mounted airlift harvester for easy sea urchin retrieval.

In today's global marketplace, Atlantic Canada's rich traditions, experience, innovations and excellent transportation facilities via air, sea and land, all play a key role as the industry continues to develop innovative ways to grow its business and successfully rises to the challenge of coping with diminished resources in its traditional groundfish industry.

## New Challenges, Products and Markets

Careful planning, dramatic shifts in direction and integration of ecological concerns are breathing new life into the Atlantic fishery, gradually transforming the sector from a traditionally resource-driven one to a market-driven sustainable fishery. Demonstrating both creativity and initiative, the Atlantic fishery and its fish processing industries are experimenting with traditional species, developing markets for non-traditional and under-utilized species, applying new technologies to a growing aquaculture industry, and targeting



specialized markets worldwide with everything from sea urchins to Irish moss to frozen herring roe. Emphasis has been on rebuilding and maintaining fish stocks, product development and on remaining competitive by adopting harvesting and marketing strategies that best respond to domestic and world customer demand for quality products and service at competitive prices.

All that restructuring and redirecting is bearing fruit, generating profits and growth across the Atlantic region. Newfoundland, hit hard by the downturn in groundfish stocks in the early 1990s, posted its highest ever figure for total commercial landings in 1998 – some 250,000 tonnes worth \$384 million.

And for larger national and international companies in the sector, new approaches are paying off as well. Newfoundland-based Fishery Products International Limited boasted a net income of \$8.2 million in 1997, a 34% increase from 1996. Sales reached a record level of \$676 million, highlighted by an 11.5% increase in value-added sales.

The forward-thinking company is processing record amounts of cold water shrimp and has invested almost \$12 million into upgrading two processing plants. And Nova Scotia- and Newfoundland-based High Liner Foods Incorporated (formerly National Sea Products) saw consolidated sales for 1997 increase almost 10% to \$278 million thanks in part to new product innovation. High Liner, founded in 1899 in Lunenburg, Nova Scotia, ended the year with a net income of \$8.6 million, a 145% increase from the year before.

### **Aquaculture Growth Fueled by Environment and Technology**

Processing and marketing of fish and shellfish harvested from the wild resource still accounts for the majority of the industry's products. However, an ideal Atlantic coastal environment has allowed the growth of an aquaculture industry with a range of species including salmon, trout, oysters and mussels – all attracting growing shares of world markets.

The industry has enjoyed significant growth in the salmon aquaculture sector, led by the



### **Fishery / Aquaculture**

#### **Gaining From New Technologies and New Techniques**

Responding to existing and new market opportunities; developing better and more cost-effective harvesting, processing, packaging and shipping techniques; and adapting to ecological and environmental concerns have resulted in a whole range of research and development activities conducted by experts at universities, marine and food research centres and by private sector R&D departments.

Recent product and process innovations include development of:

- A dry-land pound system regulating the lobster molting cycle, allowing marketing of live lobsters year-round
- A range of value-added fish-based products
- Portion-controlled packs for the food services industry
- Fish blood farming technique for use in lowering temperature of human organs destined for transplant
- Feeding formulas and automatic moist feed delivery systems
- A wealth of experimental and commercial development work involving a number of shellfish and alternative finfish species



## A New Wave for Fishery Products International

*Over the last few years, Fishery Products International (FPI), one of Canada's largest seafood producers, has faced some rough seas. The downturn in Atlantic groundfish stocks in the early 1990s challenged the Newfoundland-based fish processing company like never before. But FPI wasn't going to hang up its nets. It began reinventing itself, an ongoing process that has turned the company into a successful global seafood enterprise with sales of more than \$676 million and customers from the United Kingdom, the United States, Japan and Switzerland.*

*The key for FPI was to add value. With aggressive marketing, innovative product development and investment in modernized plants and equipment, FPI was able to grow its business. It added a new four million cubic-foot distribution centre in the U.S. and modernized its main U.S. processing facility. It also sought new markets for its products including the warehouse club and private label sectors. New products, such as Salmon in Pasta and Haddock Ratatouille followed. In 1997, value-added production reached a record high of more than 29,000 tonnes, an increase of 17% over the previous year. Value-added sales skyrocketed 11.5%.*

*Now, FPI is looking to the future with exciting opportunities in areas like cold water shrimp, innovative, global-thinking, always looking for an opportunity – that's FPI. It's riding a new wave to success, one of its own making.*

environmentally suited Bay of Fundy region of New Brunswick.

It's now home to more than 79 farms. Total salmon aquaculture production in the province was 14,000 tonnes in 1998 with a dollar value of \$120 million. Three quarters of the production was exported to the United States. In the last 10 years, the number of aquaculture farms in New Brunswick has increased 250% while production has increased 30-fold and the province's aquaculture industry is becoming increasingly diversified, with the farming of other finfish as well as shellfish. In Prince Edward Island, mussel and oyster production topped 11,000 tonnes in 1997. P.E.I. is home to 87% of the Canadian farmed mussel production. Mussel production is also leading the way in aquaculture growth in Newfoundland & Labrador. One thousand tonnes of blue mussels were produced in 1998, up from 717 in 1997. It is anticipated that mussel production will double in the

next couple of years. Markets appear strong and there is an abundance of excellent sites available for shell fish culture. Newfoundland aquaculture also includes scallops, steelhead trout and Arctic char. Experiments with fish-farmed cod have been very successful and commercial production, which is subject to the Department of Fisheries and Oceans Total Allowable Catch (TAC), is expected to begin soon. Newfoundland is also experimenting with sea urchin as an aquaculture species. Nova Scotia is branching out, too. Besides Atlantic salmon, steelhead trout, mussels, oysters and scallops, Nova Scotia operators are fish-farming quahogs, sea urchins, dulse, clams and eels. Total production in Nova Scotia in 1997 was 3,000 tonnes.

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# Information Technology and Telecommunications: *Opportunity*

## Atlantic Canada – Leaders in Information Technology and Telecommunications

We have always been communication pacesetters in Atlantic Canada – from our role three centuries ago as the communication link between the old world and the new; to 1901 when Marconi heard

the first intercontinental wireless message; to the 1990s, with the development of the first fully digitized telephone network in North America and telephone access to shopping, banking and information services.

Today, Atlantic Canada's \$2 billion\* Information Technology and Telecommunications sector continues with its pioneering tradition, helping the world communicate with innovative technologies. Atlantic Canada is producing leading multimedia courseware, developing innovative computer-based mapping systems, and blazing a trail in tele-medicine and tele-education.



### IT and Telecommunications

#### Atlantic Canada

- One of North America's "premier" call centre locations – more than 100 call centres employing more than 13,000 workers.
- Site of first ISDN commercial test in North America
- Site of a world's first telephone access to shopping, banking and information services
- Digital networks
- Broadband deployment
- Active IT-related associations including:
  - New Brunswick Information Technology Alliance Inc.
  - Newfoundland Alliance of Technical Industries
  - Nova Knowledge
  - Telemarketing Industry Association
  - Information Technology Association of Canada (Atlantic Chapter)

\*Note: All dollar figures are in Canadian funds unless otherwise stated.



## The Knowledge to Compete

The region is well known for its natural resources – forestry, fishery, mining. But it's also making a worldwide reputation for itself in Information Technology (IT), Atlantic Canada's latest "natural resource." From advanced training technology to multimedia to software development, the region's groundbreaking IT sector is selling its products the world over.

Look at xwave solutions, for instance. It began in early 1999 as a merger of the IT divisions of NewTel and MT&T, two of Atlantic Canada's largest telecommunications companies. xwave is the fourth largest Canadian-owned Information Technology service company with offices in St. John's, Halifax, Calgary, Edmonton as well as one in Dallas, Texas. With more than 1,000 IT professionals and estimated revenues in excess of \$100 million, xwave represents the next generation of IT companies.

Universal Systems is also growing. The Fredericton-based company is a global leader in land and marine mapping software. Founded in 1979, Universal Systems

has over 3,000 installations in more than 50 countries. Its customers are as varied as the Brazilian Navy, the Port of Singapore, the UK Hydrographic Commission, Raytheon and Inco.

Corporate and government training is a multi-billion dollar global industry, and Atlantic Canada is an active player. Fredericton-based LearnStream Inc., for example, is one of Canada's leading providers of interactive courseware. The company produces Web-based and computer-based training, multimedia CD-ROMs and Web/text/CBT/instructor combinations. *AV Video & Multimedia Producer* magazine included LearnStream in its "Top 100" list of multimedia producers. Services include workstation and networking technologies to corporate management topics, medical industry software, defense industry packages and emergency measures training.

## Wired for the Future

The region's telecommunications infrastructure is simply one of the best in North America and the world. Atlantic Canada offers high-speed digital links, broadband networks, mobile and marine

communications, satellite processing systems and more. Prince Edward Island, for example, is home to Canada's first province-wide ATM-based broadband network. MT&T's fully digital telecommunications network in Nova Scotia includes 4,800 kilometres of fibre-optic cable. And New Brunswick-based Fundy Communications boasts a state-of-the-art synchronous optical network that uses fibre-ring technology. When a break occurs in one part of the network, service is automatically rerouted.

It's more than just good networks. Atlantic Canadians know how to make the most out of those connections. For example, NBTel, an acknowledged telecommunications leader, launched the first fully digital provincial switching network in North America in 1993. It was also first in the world to offer TalkMail™, a universal voice-messaging service provided to customers along with their basic local service, and CallMall™, an interactive service that gives customers access to home-based banking, shopping and information services. In Newfoundland and Labrador, the province-wide

fiber optic system has allowed development of the Tele-medicine and Educational Technology Resources Agency (TETRA) network – the longest standing tele-medicine program in North America. Next door, the Nova Scotia TeleHealth Network is an ambitious project that aims to connect every hospital in the province to a computer and videoconference system. When completed it will be one of the largest tele-medicine projects in the world.

The quality of Atlantic Canada's telecommunications infrastructure and low cost business environment has made it the perfect place for call centres, incoming and outgoing, fielding calls from Canada or the United States. The region is home to more than 100 call centres employing more than 13,000 workers. That's why the Boyd Company calls Atlantic Canada a "premier" location for the industry. Companies like IBM, AT&T Canada, Royal Bank, Air Canada, Scotiabank, Unisys, Xerox, Federal Express, Delta Hotels and Phonetix have set up call centres here. When it comes to location, *Call Centre Magazine* says, "Canada is delivering as advertised." With the low dollar, low cost of

doing business, excellent education system, high worker productivity and government financial assistance, it's no wonder Atlantic Canada is attracting so many call centres.

Those kinds of advantages have also attracted such financial institutions as the Royal Bank of Canada and the Canadian Imperial Bank of Commerce to the region to set up high-level electronic banking centres.

All these call centres and back office support centres have stimulated other kinds of business development. Enterprising Atlantic Canadians offer such call centre services as candidate profiles, customer contact skills analysis and many training programs including inbound telemarketing and basic telephone selling. Others are involved in developing call centre-related software.

And, Atlantic Canada doesn't only provide services, it also produces innovative telecommunications products. NCA Microelectronics Inc., for example, is a specialist in the design and development of television encryption systems. NCA was awarded Canada's E.R. Jarmain Award for Outstanding Achievement in

*Advanced distance education networks in Atlantic Canada provide easy access to a wide range of training, education and professional upgrading. What's more, they are fueling exponential growth in learning technologies development, a field of almost endless possibilities. Right now, Canada produces only one-third of the courseware required for its national markets, and demand here and abroad is increasing every day.*

*Meeting that demand are people like Gary and Carol Anne Forsgren, partners in Forsgren & Associates Inc.*

*For them, New Brunswick's open, distributed distance education network, TeleEducation NB, has meant the opportunity to develop a new product – one that has already brought benefits to Atlantic Canadians while attracting international clients for the Forsgrens. The program, Adapting to Distance Learning Needs... Videoconferencing, was prepared for first use over TeleEducation NB's network with assistance from the network's Program Development Fund.*

*Gary Forsgren explains, "Adapting to Distance Learning Needs... Videoconferencing is a train-the-trainer program we developed in conjunction with the New Brunswick Healthcare Association to train the instructors who were delivering the certification program for ambulance attendants. The ambulance attendant training was being delivered by videoconference technology in order to reduce the costs and because the attendants are spread out geographically around the province. Having developed the program for them, we have now marketed it to organizations across North America including Corning, the Wilson Learning Group, universities and colleges."*

*He adds, "It's the first multi-point software skills training that we know of in the world. And, for many parts of the world, it remains absolutely state-of-the-art."*

*Specialists – that's what Atlantic Canadian telecommunications manufacturers are. A good example is Hermes Electronics Inc., a global leader in the design, development and manufacture of underwater acoustic surveillance systems, advanced electronic and electro-mechanical systems for military applications. A subsidiary of Ultra Electronics in the UK, Hermes' modern facility is strategically situated to take advantage of world markets through Halifax's year-round seaport and international airport.*

*"This has become increasingly important as Hermes continues to expand," says Ken Walker, Hermes' Director of Marketing. "We have the production capability, the engineering expertise, the skilled labour force, and a commitment to growth, that should prove attractive to overseas companies wanting to establish an operating presence in North America."*

Engineering for its Chameleon, a system which prevents the theft of paid television service.

### **Established Strength**

The scope of the IT and knowledge industries in Atlantic Canada is matched by the depth of expertise. Atlantic Canada has built on its established strengths in telecommunications, resources, mapping and training – to name just a few areas – to create new opportunities for development, employment and investment.

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# Ocean Technology: *Opportunity*

## Ocean Technology Natural for Canada's Atlantic Provinces

Leadership in ocean technology comes naturally in Canada's Atlantic region. The four provinces making up the region have developed expertise on a history of fishing, shipbuilding and resource management. Today, Atlantic Canada's ocean industries run the gamut from ocean mapping to cold ocean engineering to advanced marine communications. Indeed, half of all Canadian companies involved in ocean technology are located in Atlantic Canada.

Shipbuilding and fabrication are extremely high-tech, multifaceted businesses in the region. An Atlantic Canadian company, Irving Shipbuilding is currently building two 1,200 TEU container ships as well as a number of vessels for the offshore oil and gas industry at its yards in New Brunswick, Prince Edward Island and Nova Scotia. The company was also responsible for the \$6.26 billion\* program to supply state-of-the-art patrol frigates for the Canadian Navy. Nine of the 12 frigates were built at Irving's Saint John Shipbuilding Limited. Fabrication and shipbuilding in the region use every type of material from cupro-nickel to titanium and

\*Note: All dollar figures are in Canadian funds unless otherwise stated.

## Mapping an International Course

*With over 3,000 installations in over 50 countries, Universal Systems Ltd. (USL) has come a long way since its founding 20 years ago by former University of New Brunswick professor Dr. Salem Masry. Today, USL has more than 40 distributors and alliances in 38 countries. Its current employment of 60 is set to grow by another 75 people over the next three years and the Financial Post has included the company in its Technology 100 list every year since 1994.*

*The basis for all this success is USL's flagship suite of products, CARIS (Computer Aided Resource Information System). It has attracted clients as varied as the Port of Singapore, the Brazilian Navy, the UK Hydrographic Commission, Raytheon, Inco Ltd. and the New Zealand Department of Defense. And USL supports this highly successful marine and land mapping system with such services as world-wide technical support, training, consulting, and custom solutions. What's more, the firm's multilingual staff have tested and delivered CARIS software in a variety of languages including French, Spanish, Arabic, Chinese, Russian and Polish.*

range from in-shore, off-shore and sub-service vessels to oil rigs and platforms.

The region's boom in offshore oil and gas production has brought new technologies and expertise to bear. The first project was Hibernia, an \$8 billion offshore oil project that today pumps more than 150,000 barrels of oil a day from a platform located 315 kilometres east-southeast of St. John's in 80 metres of water. The massive Hibernia drilling platform was constructed at Bull Arm, a one-of-a-kind facility built to meet the rigorous demands of the offshore petroleum industry. Costing \$500 million, Bull Arm includes, among many features, a 40,000-square metre drydock that is 130 metres in diameter and 16.5 metres below tide level. Bull Arm is now the site for making modules for Terra Nova, the \$4.5 billion offshore oil project on the Grand Banks off Newfoundland. Terra Nova is expected to begin pumping oil in early 2000. The newest offshore project is natural gas off Sable Island, 160-300 kilometres off the east coast of mainland Nova Scotia. Six natural

gas fields have been identified with an estimated 3.5 trillion cubic metres of recoverable gas reserves.

Production is scheduled to begin November, 1999. A 1,000 kilometre pipeline will pump the natural gas through Atlantic Canada and into New England.

The region's fabrication and shipbuilding skills are married, logically enough, to outstanding capabilities in ocean and marine shipboard technology. Among the areas of recognized leadership are hydrographic and oceanographic instrumentation, remote-sensing systems, navigation and communication systems and "smart ship" technology.

A good example of the many companies operating in this area is Brooke Ocean Technology Ltd., which provides a full range of systems engineering and R&D services to the marine science community. Among Brooke's products is FLATTS (First Line ATTachment Systems) for remotely attaching a towline to a disabled autonomous underwater vehicle. This technology has the potential to be

adapted to the recovery of survival capsules and test torpedoes.

Closely related to ocean and marine shipboard technology is the field of marine communications. An excellent example of Atlantic Canadian expertise in this bustling field is Hermes Electronics Inc. Located in Dartmouth, this company is a global leader in the design, development and manufacture of underwater acoustic surveillance systems.

Coastal Habitat Assessment Research and Technology Inc. (CHART), a St. John's company, specializes in the application of satellite remote sensing to coastal zone management. The company's unique coastal habitat classification technique uses multispectral satellite imagery. CHART products have been used in habitat and seaweed mapping, fisheries data analysis, oil spill sensitivity ranking and economic resource valuation.

Another Atlantic company, IOSAT, located in Halifax, is making it easier to use satellite images in a wide range of applications. IOSAT

makes the SENTRY system, a multi-satellite ground station that receives and processes high resolution images of the Earth's surface. Self-contained and highly portable, the system has applications in everything from pollution control and petroleum exploration to military and emergency response management.

In another sphere of ocean technology, Atlantic Canada's highly developed skills in cold ocean engineering were in full view with the construction of the \$1 billion Confederation Bridge, a 13-kilometer bridge spanning the Northumberland Strait from New Brunswick to Prince Edward Island. Complex planning for construction involved the region's Institute for Marine Dynamics (IMD) in field studies on the action of ice on bridge piers, scale modeling of ice loads, experiments on ice adhesion, and numerical and analytical studies to provide estimates of hydrodynamic and ridged ice loading. Thanks in part to the bridge, which opened in May of 1997, exports from P.E.I. have increased 200% from 1992 levels.

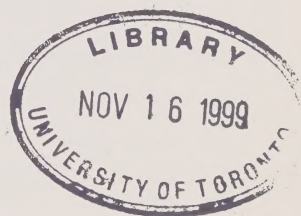
In Atlantic Canada, private



## Ocean Technology

Home to one-half of Canada's ocean technology sector, Atlantic Canada has an exceptional range of ocean technology research organizations. A partial list includes:

- Alliance for Marine Remote Sensing
- Bedford Institute of Oceanography
- Canadian Centre for Marine Communications
- Centre for Cold Ocean Resources Engineering
- Centre for Offshore and Remote Medicine (MEDICOR)
- Huntsman Marine Science Centre
- Memorial University, Centre for Marine Simulation
- NRC Institute for Marine Dynamics
- Nova Scotia Innovation Corporation (inNOVAcorp)
- Ocean Engineering Research Centre
- University of New Brunswick, Ocean Mapping Group





companies and research institutes are involved in a host of applications for everything from aquaculture management to iceberg tracking, search and rescue, storm surge prediction, and pollution tracking.

Many of Atlantic Canada's ocean engineering and consulting companies are involved in some aspects of the environmental industry. Their work includes handling point source pollution as well as dealing with such unpredictable events as oil spills and discharges associated with offshore drilling and tanker traffic.

Meanwhile, as with shipbuilding, ocean technology has meant a whole new life for another of Atlantic Canada's traditional industries, the fishery. Thanks to the region's varied marine habitats, farmed seafood ranges from Atlantic salmon and sea trout to Arctic char, scallops, mussels and oysters. Spin-offs from aquaculture are many. One specialty is

cold water farming of fish for their blood which is used to lower the temperature of human organs for transplant, thereby prolonging their viability. (For more information on Atlantic Canada's aquaculture industry and its spin-offs, please see the companion information sheets, Fishery/Aquaculture and Biotechnology.)

Ocean technology in Atlantic Canada runs all the way from new spins on traditional industries to space-like explorations of deep sea – and like its range, the industry's resources and potential are virtually boundless.

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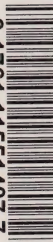
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